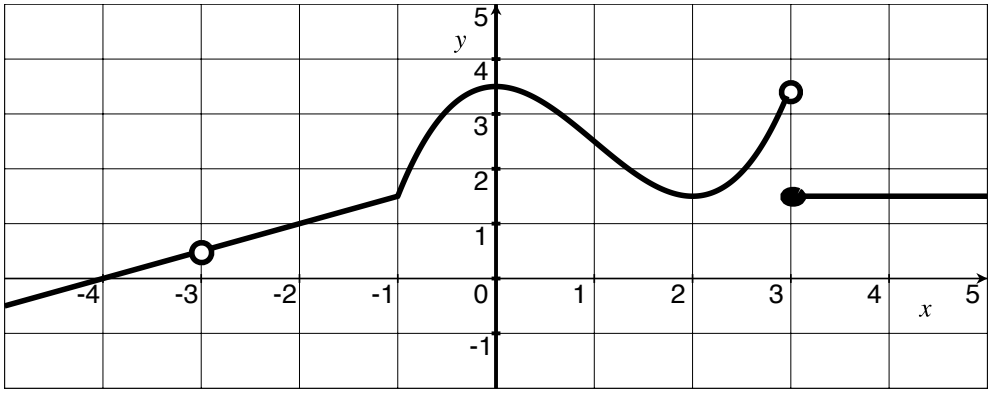
Quiz 3
TQS 211

You are welcome to use any written homework from Chapter 2, worksheets you completed, and a calculator but no books or class notes. Show *all* your work (algebraically or geometrically) for each and simplify. No credit is given without supporting work.

1. Let g be the piece-wise defined function below. This means the graph of g is the *entire* graph shown below.

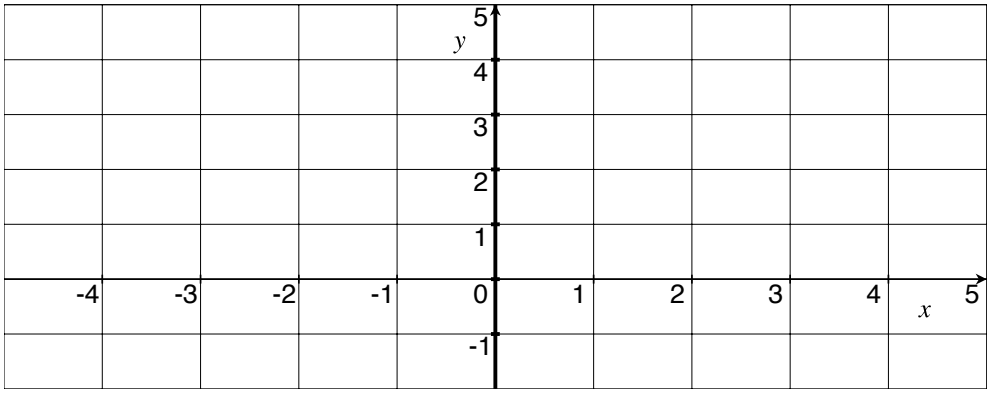


(a) [2] Find the following *if* possible:

$\lim_{x \to -3} g(x)$ $\qquad\qquad$ $g(-3)$

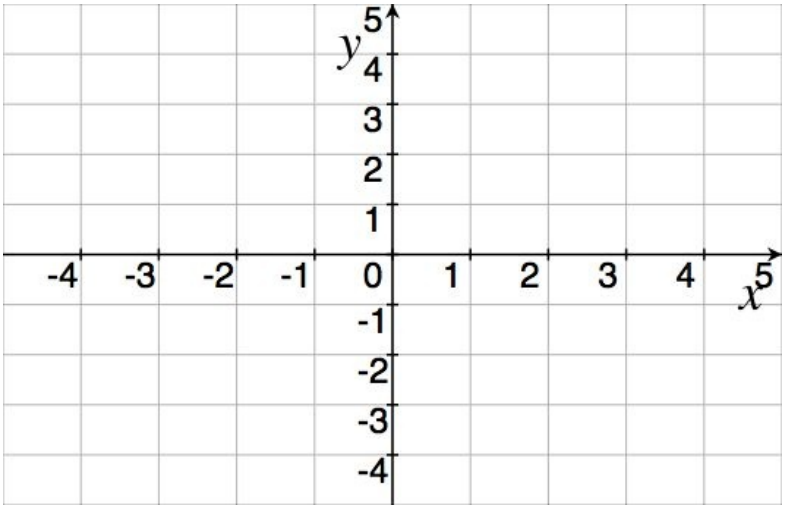
(b) [3] At what x values is g not continuous?

(c) [5] Sketch the graph of g'.



2. Consider $f(x) = x^2 - 2$.

(a) [1] Carefully graph f.



(b) [1] Find the total change of f from when $x = -1$ to $x = 2$.

(c) [1] Find the average rate of change of f from $x = -1$ to $x = 2$.

(d) [3] Estimate the rate of change of f when $x = 2$.

(e) [4] Find $f'(2)$ algebraically.